REMARKS

Claims 1-6 are pending in the application. Claims 1 and 2 have been rejected in the referenced office action. Claims 3-6 have been objected to. No claim amendments have been made herein. The specifications have been amended to provide equations that were inadvertently left out in the section on "Background of the Invention." No new matter has been added by the amendments. Reconsideration of the application as amended is respectfully requested in view of the comments below. The Examiner's objections and rejections are addressed in substantially the same order as in the referenced office action.

REJECTIONS UNDER 35 USC § 102

Claims 1-6 stand rejected under 35 USC § 102(b) over *Fernandez* et al. Claim 1 is an independent claim.

The present invention is a method of seismic data processing. A source is used for propagating seismic waves into an earth formation and receiving signals from the formation. The received signal results from interactions of the seismic waves with the earth formation and indicates a property of the earth formation. A plurality of wavelets is defined that are usable in the wavelet transformation of the signal. The plurality of wavelets can be defined, for example, by performing a wavelet transform of the received signal. A particular wavelet is chosen from this plurality of wavelets for being most characteristic of the signal.

8

In *Fernandez*, a tree-structured 1-d wavelet transform process is used to decompose the seismic trace into a low-frequency and a high-frequency component. The energy calculation is used to determine whether a significant fraction of the trace energy resides in each component. If not, then that component is not analyzed further. If a component of the trace does include significant energy, then that component is further decomposed by the tree-structured wavelet transform process. This is discussed in Section 4, and specifically in Section 4.1 of *Fernandez*. Thus, the original seismic trace is decomposed into frequency elements by using the tree-structured wavelet transform to recursively split the trace into high and low frequency components. The energy calculation is NOT used to select a similar wavelet, but to select either the low-frequency component, the high-frequency component, or both for additional analysis.

At no point does *Fernandez* define a plurality of wavelets characteristic of the received signal, an element of claim 1(b). *Fernandez* does not select a wavelet from a plurality of wavelets , an element of claim 1(c). *Fernandez* does not add the selected wavelet to a select list of wavelets, an element of claim 1(d).

In order for a claimed invention to be unpatentable under 35 USC §102, the prior art reference must disclose each and every limitation of the claim arranged as in the claim. This is clearly lacking in the present case. As discussed above, there is no disclosure in *Fernandez* of at least three elements of claim 1. Accordingly, Applicant

9

respectfully submits that claim 1 and claims 2-6 that depend upon claim 1 are patentable under 35 USC § 102 over *Fernandez*.

In addition, there is no teaching of the material discussed above in the prior art cited by the Examiner and no teaching or suggestion in the prior art of record to come up with the claimed invention. Accordingly, applicant further submits that claims 1 and claims 2-6 that depend upon claim 1 are also patentable under 35 USC § 103 over *Fernandez* and the prior art of record.

It is further noted with reference to claim 2 that the wavelet packet transform as disclosed by *Fernandez* in § 4 is clearly different from the wavelet transform discussed in the present invention.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 13-0010 (GTI-1538).

Respectfully submitted,

Dated: January 27, 2005
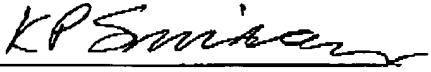
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10